Geophysical Research Abstracts,
Vol. 11, EGU2009-10388, 2009
EGU General Assembly 2009

Evaluation of a Sectoral Approach to Integrated Assessment Modelling (EuroDelta II)

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The EURODELTA II (ED II) project is the second phase of the EuroDelta co-operation project. The EuroDelta co-operation is intended to support the design of air pollution control strategies in Europe, both under the European Commission and under the Convention on Long-range Transboundary Air Pollution.

The EuroDelta approach is to investigate the robustness of source-receptor relationships used in Integrated Assessment (IA) modelling by introducing an ensemble of models. The project is based on a collaboration between the European Commission Joint Research Centre (JRC) at Ispra (Italy) , five air quality modelling teams at Ineris (France), the Free University of Berlin (Germany), Met.no (Norway), TNO (Netherlands) and SMHI (Sweden) and the Oil Companies' European Organization for Environment, Health and Safety (CONCAWE).

While the first phase of EuroDelta, ED I, examined the feasibility of using model ensembles to evaluate the robustness of source-receptor calculations in predicting recent (2000) and future (2020) air quality in Europe, the second phase ED II investigates the consequences of introducing sectoral approaches in integrated assessment modelling.

A total of 60 different emission scenario calculations were evaluated to determine how the different models represent the impacts on a European scale of applying emission reductions to individual emission sectors. Emission reductions from power combustion, industry, residential and traffic sources were investigated independently and additional efforts were also addressed to investigate the effect of shipping emission control in the Mediterranean Sea.

The main conclusion is that the impact of emission reductions in individual sectors is more appropriately described with the help of sectorally disaggregated source- receptor calculations. The recommendation is to incorporate sectoral weights to integrated assessment modelling in order to better support future revisions of European air pollution control policies